

## ABSTRACT

The temperature/humidity control system includes a humidifying device having a vibrator to convert water into vapor. The control system also includes, a storage member storing the vapor generated by the vibrator, and at least one mixing member to humidify hydrogen and air supplied to the fuel cell stack with the vapor stored in the storage member. The control system fuel cell includes a preheating device configured to preheat the hydrogen and air humidified by the mixing member, and at least one temperature sensor detecting temperatures of hydrogen and air having passed the preheating device and a temperature of coolant of the fuel cell stack. Finally, the control system includes at least one humidity sensor detecting humidities of hydrogen and air having passed the humidifying devices, and a fuel cell control unit controlling the humidifying device and the preheating device based on signals of the temperature sensor and the humidity sensor.